DOCUMENT RESUME

ED 356 881 PS 021 338

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TITLE Pediatric Interventions To Promote Picture Book Use.
PUB DATE Mar 93
NOTE 6p.; Paper presented at the Biennial Meeting of the Society for Research in Child Development (60th, New Orleans, LA, March 25-28, 1993).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Beginning Reading; *Family Involvement; *Family Programs; Infants; *Literacy Education; Parent Education; Parents as Teachers; *Pediatrics; *Picture Books; Preschool Children; Preschool Education; Primary Health Care; *Program Effectiveness
IDENTIFIERS Dialogic Education; *Family Literacy; Pediatricians; Shared Book Experience; Shared Reading

ABSTRACT

Pediatricians can play a role in promoting family literacy. Boston City Hospital has developed a model program that integrates family literacy into pediatric primary care, and has designed a program of research to evaluate its effects. The program has three components. In the waiting room, volunteers model for parents how to listen, question, discuss, and read books with children. Secondly, in the examination room, the pediatrician provides guidance about books by implicitly showing parents the principles of dialogic reading. Finally, at each visit, beginning at six months, the pediatrician gives the parent a developmentally and culturally appropriate book for the child to take home. A study of the program found that parents who had received guidance in books reported that looking at books was one of their child's three favorite activities. Preliminary results from the second study found that parents participating in this program employed a variety of book-sharing strategies and showed widely variable interaction styles when reading to their children. These studies indicate that pediatricians can effectively intervene in support of book use and literacy development. (MM)

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Pediatric Interventions to Promote Picture Book Use

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Pediatricians can play a role in promoting family literacy. By helping parents to introduce their children to picture books at an early age, pediatricians, nurse practitioners, and family practitioners can foster positive relationships with books. This may be especially true for low-income children who disproportionately struggle -- and fail -- at elementary school reading.

Three factors give pediatricians a special opportunity to influence the patterns of family book use: The first is Access: young children and their parents visit the doctor frequently for immunizations, "well-child" care, and minor illnesses; they may have much less contact with other early-childhood professionals. The second factor is the Doctor-Parent Relationship: parents and pediatricians come to know each other -- and hopefully to trust each other -- as they collaborate on behalf of the child's well-being. Because they meet with parents one-on-one, pediatricians can adapt their guidance to each family's particular stresses and strengths. The third factor is Time: although the "well-child" visit is typically short, parents and children often sit for long periods in waiting rooms, where they are a captive audience.

At Boston City Hospital, we have developed a model program that integrates family literacy into pediatric primary care, and a program of research designed to evaluate its effects. These will be the topics of the rest of my talk.

The model program has three components: (1) In the waiting room, volunteers look at books with children. They listen, question, discuss, and occasionally read, modeling for the parents. Component (2): In the examination room, the Pediatrician provides guidance about books. For example, while taking the history the pediatrician might hand the infant a book and notice, out loud, how the child stills, looks, reaches, and begins to babble. The pediatricians encourage the parents to share books with their children -- not to "read to" them, and not to "teach" them to read -- but to help them to grow up loving books. The parents are not trained in Dialogic Reading, per se, but the pediatricians include its principles in coaching parents. Component (3): At each visit, beginning at six months, the pediatrician gives the parent a book for the child to take home. The books, selected to be developmentally and culturally appropriate, are purchased by the program at discount. By the age of six, most children will have taken home 12 or more books.

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The program is now four years old. More than 15,000 books have been given out. Pediatricians report anecdotally that giving books helps them to talk with parents about ways to stimulate language and about their aspirations for their children. Some pediatricians believe that watching a parent and child look at books together allows them to draw inferences about the child's cognitive, language, and motor development and about the parent-child relationship. Some parents report that their children have come to love of books, as a result of the books they got from their doctors.

Such reports have formed the basis for the program of research I will now describe.

In our first study (Needlman, 1991) we asked, "Does exposure to the program -- the volunteers, guidance, and books -- correlate with reports of increased book use?" This study was begun several months after the program started. Seventy nine consecutive parents of children aged 6 - 60 months were interviewed in the waiting room of the Boston City Hospital Pediatric Primary Care Center. (41% were 6-11 months old, 32% 12-23 months, and 28% 24-60 months old). Virtually all were low income; 39% received AFDC and 40% were single; the largest group was African American, with other groups as listed.

The parents were told that we were interested in "things parents do with their children," without any specific mention of books or reading. We asked them to recall everything their child had done in the past 24 hours, and to report their child's three favorite things to do. At the end, we asked if the child had every been given a book by the doctor, if the doctor had talked about books to the parent, or if the parent remembered seeing the waiting room readers.

Parents who had been exposed to the volunteers, guidance, and books at a previous visit were compared with parents who denied being so exposed. In a multivariate analysis controlling for these potential confounder variables -- age, ethnicity, parental education and reading habits, and government support --, the unprompted report by parents that they had looked at books with their children during the past day, or that looking at books was one of their child's three favorite activities was associated with having been given a book at a previous visit -- but not with the other program components -- with odds ratio 4.05, and confidence interval 1.12 to 14.6).

We also found that the association between parent-reported book use and having been given a book was strongest, with odds ratio of 7.8, among parents receiving AFDC, suggesting that the program may have been particularly beneficial for that group.

Our second study was prompted by pediatricians' reports that they could gain insights about the parent-child relationship by observing the dyad share a book in the office. We asked, "When parents and infants look at books together, what do they actually do? And, how do their individual behaviors and their interaction while looking at books relate to external measures?"

62 Children participating in a longitudinal, controled study of the effects of in-utero cocaine exposure were videotaped looking at a book with their parents at six months of age, as part of a more extensive developmental evaluation. This evaluation included maternal interview and laboratory measures of attachment, face-to-face interaction, and cognitive and motor development.

Parents were asked simply to "look at a book with your child," for three minutes. We chose a 4" square board book with bright close-up photographs of infants doing every day things and expressing a range of emotions. Each page had a single word on it, describing the child's activity.

We coded parent and child verbal and non-verbal behaviors, using a modification of Resnick's checklist of parents' book-sharing behaviors with young children (Resnick, 1987). Inter-rater reliabilities, calculated for every fourth tape, averaged 85.5% and 88.6% for the mother's and child's behaviors, respectively. Data analysis for this study is underway, but some preliminary findings can be reported:

(1) Parents employed a variety of book-sharing strategies, as shown here: for example, 81% of parents pointed to pictures or words, and but only 22.6% allowed the child to hold the book, and 16% allowed the child to turn the pages. Sixty percent of parents described the pictures and 61% linked items in the book to the child's life; 23% performed noises or motions from the book (for example, making animal noises), and 42% verbalized the child's feelings or intentions, such as "You like that baby, don't you."

(2) The nine Parental Language items held together as a cluster (Crohnbach's alpha .71) and were summed. We hypothesized that the resulting index of maternal language during book use would be correlated with the child's language development. However, we found no correlation between this index and the child's score on the Kent language cluster of the Bayley Scale. If meaningful associations exist between reading behaviors and other areas of development they are almost certainly more complex. Maternal language, as we measured it, was not correlated with cocaine use; neither, surprising, was infant attention to the book: in this group, on average, infants attended to the book between 70 and 90% of the time, based on an every ten-second time sample.

(3) The impression of widely variable parental interaction styles is illustrated in the following transcripts taken from the videotapes: (read from overhead-- reprinted below).

Across ten subjects for whom we have completed transcriptions, the mean number of phrases spoken during the three-minute taping varied from 3.7 to 43.0 (mean 25.8) and the mean number of words per phrase from 2.3 to 6.6 (mean 4.0).

In addition to the tapes at 6 months of age, the same group of parents and children is being taped at 12 and 24 months. This will allow us to investigate issues of continuity and change in book-related behaviors.

Finally, I want to describe a study that I believe would help define the role of pediatricians in the promotion of book use. The

question is, "Does a program in which pediatricians give books and guidance to parents routinely, at every health maintenance visit, lead to more positive attitudes and actions towards books and literacy development, and does it result in children who are more likely to succeed at reading in school. We have proposed to enroll children at four months of age and randomly assign half to receive the book intervention at each visit, with the other half to receive a placebo intervention consisting of information about gross-motor milestones and a toy. The frequency and quality of the parent-child book interaction would be recorded at several time points. Children's verbal language and emergent literacy would be measured at 3 1/2 years, and reading attainment measured in elementary school.

I have tried to argue that the pediatric encounter offers important opportunities to intervene in support of book use and literacy development, and that the potential value of such an intervention raises questions worthy of attention.

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Resnick MB, Roth J, Aaron PM et al. Mother reading to infants: A new observational tool. *Reading Teacher*. 1987;40:886-895

Sample Transcripts

(1)
A LITTLE BABY LIKE YOU
WANNA EAT THE BOOK
WANNA SEE
LOOKING, SEE, JOKING
YEAH, LOOK
MICHELLE, BOOK, MICHELLE
(pointing too the child, then book, then back)
WANT TO SEE THE NEXT PAGE
TURN THE PAGE
EATING
YOU LIKE TO EAT
SEE THE BABY EATING AND REACHING
(child starts to fuss)
OH, YOU WANT TO HOLD IT BY YOURSELF, OK
OH YEAH

(2)
SEE THE BOOK
SEE THE LITTEL BABY ON THE BOOK
LITTLE BABIES
(child waves arms around)
COME ON, COME ON
HUH, SEE THE LITTLE BOY BABY
HE'S WATCHING
JUMPING
EATING
REACHING
HUH, SITTING
LOOKING, SEE
HE LOOKS LIKE YOU, JERARD
SWINGING
DRINKING
LAUGHING
(child grabs onto edge of book, patting book with both hands, cries out happily)
CRAWLING
SEE THE BABY CRAWLING